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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/905,317	07/13/2001	Yasuhisa Tsujita	09253-003001	6175

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EXAMINER

PREVIL, DANIEL

ART UNIT PAPER NUMBER

2636

DATE MAILED: 03/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/905,317

Applicant(s)

TSUJITA ET AL.

Examiner

Daniel Previl

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 8-11, 15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### DETAILED ACTION

This action is responsive to communication filed on January 7, 2004.

#### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4, 8-11, 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Derbyshire et al. (US 6,271,748) in view of Munch et al. (US 6,580,364).

Regarding claim 1, Derbyshire discloses a tire condition monitoring apparatus for monitoring a condition of a tire attached to a vehicle (abstract) comprising: a transmitter operated by a battery (wheel transmitter unit 2 is provided by a battery 15) (col. 5, lines 19-20) and detects at least the temperature in the tire (the wheel transmitter unit 2 transmits information (temperature or pressure) (col. 4, lines 7-10; col. 6, lines 24-31) and a voltage-related value that varies in accordance with voltage of the battery, wherein the battery has a life (reference voltage unit provides a reference voltage output to a tight tolerance regardless of any changes in the voltage of the battery) (col. 5, lines 12-28; col. 9, lines 14-21).

Derbyshire discloses all the limitations above but fails to explicitly disclose a controller, which judges whether or not the life of the battery is ending

depending on the voltage related value wherein the judgment regarding the life of the battery is preformed with the temperature in the tire.

However, Munch discloses a controller 72, which judges whether or not the life of the battery is ending depending on the voltage related value wherein the judgment regarding the life of the battery is preformed with the temperature in the tire (a battery voltage sensor 88 samples the voltage of the power supply 26 upon the controller 72 and indicative of the sensed voltage and provides a good indication of the battery) (fig. 2; col. 5, lines 44-53; col. 8, lines 13-23).

Therefore. It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Munch in Derbyshire. Doing so would monitor accurately the condition of the battery attached to a vehicle transmitter in the tire. So, an abnormal condition of the tire could be immediately noticed by the driver, wherein appropriate measures could be taken to prevent accident that can lead to property damage or severe injury even death.

Regarding claim 2, Derbyshire discloses the transmitter wirelessly transmits data, which includes data represents the temperature in the tire and data that represents the voltage related value and the controller is located in a receiver that receives the data from the transmitter (transmitter transmits via a radio frequency transmitter, temperature and voltage) (abstract) and controller,

and the receiver are mounted behind the dashboard in a single unit housed) (col. 4, lines 3-33).

Regarding claim 3, Derbyshire discloses a comparison between the voltage related value and a variable voltage reference value that is selected with the temperature in the tire (col. 5, lines 12-53).

Regarding claim 4, Derbyshire discloses a functional equation that represent variation of the voltage of the battery with respect to the ambient temperature to which the battery is exposed (fig. 11; col. 13, lines 49-67).

Regarding claim 8, Derbyshire discloses a voltage related value is the voltage of the battery (battery voltage) (col. 5, line 19).

Regarding claim 9, Derbyshire discloses a transmitter which is operated by a battery (wheel transmitter unit 2 is provided by a battery 15) (col. 5, lines 19-20) and wirelessly transmits data (data is transmitted via a radio frequency transmitter) (abstract); wherein data represents the temperature in the tire (the wheel transmitter unit 2 transmits information (temperature or pressure) (col. 4, lines 7-10; col. 6, lines 24-31) and data that represents voltage of the battery, wherein the battery has a life (reference voltage unit provides a reference voltage output to a tight tolerance regardless of any changes in the voltage of the battery) (col. 5, lines 12-28; col. 9, lines 14-21); a receiver which receives the data from the transmitter (transmitted data is received by a receiver unit) (abstract).

Derbyshire discloses all the limitations above but fails to explicitly disclose a controller that judges whether or not the life of the battery is ending depending

on the voltage of the battery, wherein the judgment regarding the life of the battery is performed in accordance with the temperature in the tire.

However, Munch discloses a controller 72, which judges whether or not the life of the battery is ending depending on the voltage related value wherein the judgment regarding the life of the battery is performed with the temperature in the tire (a battery voltage sensor 88 samples the voltage of the power supply 26 upon the controller 72 and indicative of the sensed voltage and provides a good indication of the battery) (fig. 2; col. 5, lines 44-53; col. 8, lines 13-23).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Munch in Derbyshire. Doing so would monitor accurately the condition of the battery attached to a vehicle transmitter in the tire. So, an abnormal condition of the tire could be immediately noticed by the driver, wherein appropriate measures could be taken to prevent accident that can lead to property damage or severe injury even death.

Regarding claim 10, Derbyshire discloses a comparison between the voltage of the battery and a variable voltage reference value that is selected in accordance with the temperature in the tire (col. 5, lines 12-53).

Regarding claim 11, Derbyshire discloses a functional equation that represent variation of the voltage of the battery with respect to the ambient temperature to which the battery is exposed (fig. 11; col. 13, lines 49-67).

Regarding claim 15, Derbyshire discloses a transmitter which is operated by a battery, the battery having a life, wherein the transmitter (wheel transmitter unit 2 is provided by a battery 15) (col. 5, lines 19-20); a temperature sensor which detects the temperature in the tire (abstract); a transmitting circuit which wirelessly transmits data including data that represents the detected temperature data and data that represents the detected voltage (fig. 1; abstract; col. 5, lines 18-27); a receiver which receives the data from the transmitter (transmitted data is received by a receiver unit) (abstract); a comparison between the voltage of the battery which derived from the received data, and a variable voltage reference value that is selected in accordance with the temperature in the tire which is derived from the received data (col. 5, lines 12-53).

Derbyshire discloses all the limitations above but fails to explicitly disclose a voltage sensor which detects the voltage of the battery; a controller that judges whether or not the life of the battery is ending.

However, Munch discloses a voltage sensor which detect the voltage of the battery (battery voltage sensor 88) (fig. 2); a controller 72 that judges whether or not the life of the battery is ending (controller 72 provides a good indication of the battery) (col. 5, lines 36-53).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Munch in Derbyshire. Doing so would monitor accurately the condition of the battery attached to a vehicle transmitter in the tire. So, an abnormal condition of the tire could be immediately noticed by the driver, wherein appropriate measures could be taken

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to prevent accident that can lead to property damage or severe injury even death.

***Allowable Subject Matter***

3. Claims 5-7, 12-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. The following is a statement of reasons for the indication of allowable subject matter: In combination with all the limitations in the claim, the prior arts fail to teach or make obvious: the controller judges the life of the battery is ending if the temperature in the tire is equal to or greater than a predetermined reference value, and the controller does not perform the judgment regarding the life of the battery if the temperature in the battery is smaller than the reference value.

***Response to Arguments***

5. Applicant's arguments filed on January 7, 2004 have been fully considered but they are not persuasive.

According to Applicant's argument "neither Derbyshire nor Munch, alone or in combination, discloses or suggests a feature of claim 1, i.e. a controller which judges whether or not the life of the battery is ending depending on the voltage-related value, wherein the judgment regarding the life of the battery is performed in accordance with the temperature in the tire". The examiner



respectfully disagrees with the Applicant because Munch clearly discloses that the controller at the sensor module providing a low battery condition when the tire has a low temperature or the tire pressure is above or less than a predetermined threshold (col. 8, lines 13-23).

The examiner urges the Applicant to also read Pashayan, Jr. (US 6,252,498) on col. 6, lines 18-25; col. 4, lines 37-49.

For at least the above reason, the rejection of claims 1-15 is sustained.

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
8. Pashayan, Jr. (US 6,252,498) discloses a tire pressure detecting system for a vehicle.
9. Eberwine et al. (US 5,783,992) discloses a time based low tire pressure warning sensor.
10. Dezorzi (US 6,232,875) discloses an apparatus and method for controlling a tire condition module of a vehicle tire.
11. Koch et al. (US 5,573,611) discloses a method of monitoring conditions of vehicle tires and tires containing a monitoring device therein.
12. Lin (US 6,340,930) discloses a system and method for monitoring a condition of a vehicle tire.
13. Kessler et al. (US 6,445,286) discloses a method for operating a device for the monitoring and wireless signaling of a pressure change in pneumatic tires of a vehicle.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Previl whose telephone number is 703 305-1028. The examiner can normally be reached on Monday-Thursday. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeff Hofsass can be reached on 703 305-4717. The fax phone numbers for

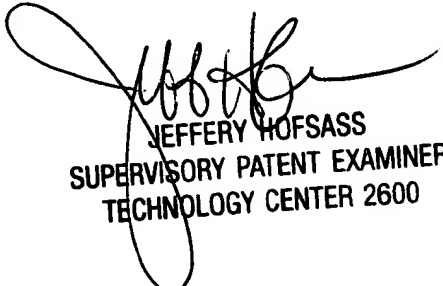
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the organization where this application or proceeding is assigned are 703 872-9314 for regular communications and 703 872-9315 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 305-4700.

Daniel Previl  
Examiner  
Art Unit 2636

DP  
February 24, 2004



JEFFERY HOFSSASS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600